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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/527,159

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Markus Luthi

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EXAMINER

GRABOWSKI, KYLE ROBERT

ART UNIT

PAPER NUMBER

3725

MAIL DATE

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09/10/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/527,159	LUTHI, MARKUS	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kyle Grabowski	3725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/13/05</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2, recites that two, four, or six image elements have rotational symmetry in *each* case about an angle of rotation of 60, 90, or 180 degrees; however this is not true in the majority of cases. In a simple example, two image elements 14 and 16 (Fig. 1) forming image cells 18 (Fig. 4) do not exhibit rotational symmetry (having the property of similar appearance after a rotation); clearly, rotations of 60 degrees or 90 degrees do not even result in the same basic shape and a rotation of 180 degrees results in the same shape with alternated dark and light portions; further, there are many other examples of four and six image elements not having a rotational symmetry at all. The wording of this claim makes distinction of the subject matter impossible and directly conflicts with the drawings.

Although the scope of the claims cannot be determined as written, as best understood by the examiner, the claims is construed to mean that the image cells *exhibit perimeters* that exhibit rotational symmetry about 60, 90, or 180 degrees. This

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interpretation is supported by Figures 4-8 and claim 2 which recites that the light and dark image elements are arranged to “alternate in the direction of rotation”.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1) Claims 1, 10-11, and 16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Green (US 5,851,032).

Green discloses a banknote which comprises two a first image pattern (Fig. 2) and a second image pattern (Fig. 3) on opposite sides of the banknote that form a predefined image, comprising selection area demarcated by the logo CRL, under transmitted light (Fig. 4); each image is formed from light and dark image elements, the dark elements black and the light elements non-printed white paper (Col. 2, 39-52); Green also discloses that the patterns have approximately equal numbers of light and dark image elements arranged randomly (Col. 3, 31-33) and are rectangular (Col. 2, 41); the second image pattern (Fig. 3) is formed from a modulo two sum function combination (Col. 3, 5-13) of the desired image (Fig. 1) and the first image pattern (Fig.

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2). This modulo two sum function combination infers that the base area surrounding the desired image is comprised of an identical arrangement of the first and second image patterns and that the selection area is comprised of a non-identical arrangement of the first and second image patterns (see Appendix).

Green discloses that the patterns have approximately equal numbers of light and dark image elements, but does not specifically disclose that the elements are exactly equal. The examiner considers his disclosure to have sufficient specificity to constitute an anticipation of the claims.

Alternatively, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide exactly the same amount of light and dark image elements. The claim would have been obvious because a particular known technique was recognized as part of the ordinary capabilities of one skilled in the art and nothing in the present applications specification provides any criticality for choosing exactly the same amount of light and dark image elements. The applicant also discloses that using the exact same number of light and dark image elements is known (Pg 2, 20).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2) Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Green (US 5,851,032) in view of Shamir (US 5,488,664).

In respect to claim 2, Green substantially discloses the claimed subject matter for the reasons stated above but does not disclose that the random pattern is formed of cells exhibiting a rotational symmetry in respect to their perimeters, each cell exhibiting equal and alternating light and dark elements however Shamir discloses a very similar invention utilizing two images which create a composite third image; that the images are composed of cells formed of rectangles with four subpixels, two black and two white; Shamir also discloses that the examples shown in Figures 2e or 2f, both having a rotational perimeter symmetry about 180 degrees, may be the only structures used (Col. 4, 10-11).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the first and second image patterns taught in Green with cells exhibiting two black subpixels and two white subpixels and having rotational

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perimeter symmetry in view of Shamir. All of the claimed elements were known in prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Using cells having rotational symmetry taught in Shamir in lieu of a random pattern (which as a whole also exhibits an approximately equal light to dark ratio) for the first image pattern in no way destroys the usefulness or purpose of Green's invention. In fact, Shamir explicitly discloses that these cells alone can be used to create the "apparently random pattern" which also functions to mask a hidden image.

In respect to claims 3 and 4, Green further discloses that the dark pixels are black and the light pixels are white (Col. 2, 40-43)

3) Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Green as modified by Shamir as applied to claim 4 above, and further in view of Howland et al. (US 6,089,614).

In respect to claim 5, Green as modified by Shamir substantially disclose the claimed subject matter for the reasons stated above but do not disclose the employment of colors that are only visible under ultraviolet or infrared light however Howland discloses a similar security device which uses indicia forming a composite image (Fig. 3) and may be viewed under infrared or ultraviolet light (Col 3., 15-17). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the dark elements taught in Green as modified by Shamir with a color only

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viewable under infrared or ultraviolet light in view of Howland et al. to increase security by providing wavelengths hidden from the average viewer (Col. 3, 18-19).

In respect to claims 6-9, Green further discloses that the pattern images are printed on a banknote (Col. 1, 20); the images are printed and carefully aligned (Col. 2, 43-49) constituting a "register print"; the selection area comprises a logo CRL (Fig. 4).

4) Claims 12-15 rejected are under 35 U.S.C. 103(a) as being unpatentable over Green (US 5,851,032) in view of Howland et al. (US 6,089,614).

In respect to claim 12, Green substantially discloses the claimed subject matter for the reasons stated above but do not disclose the employment of colors that are only visible under ultraviolet or infrared light however Howland discloses a similar security device which uses indicia forming a composite image (Fig. 3) and may be viewed under infrared or ultraviolet light (Col 3., 15-17). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the dark elements taught in Green with a color only viewable under infrared or ultraviolet light in view of Howland et al. to increase security by providing wavelengths hidden from the average viewer (Col. 3, 18-19).

In respect to claims 13-15, Green further discloses that the pattern images are printed on a banknote (Col. 1, 20); the images are printed and carefully aligned (Col. 2, 43-49) constituting a "register print"; the selection area comprises a logo CRL (Fig. 4).



***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyle Grabowski whose telephone number is (571)270-3518. The examiner can normally be reached on Monday-Thursday, every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on (571)272-4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

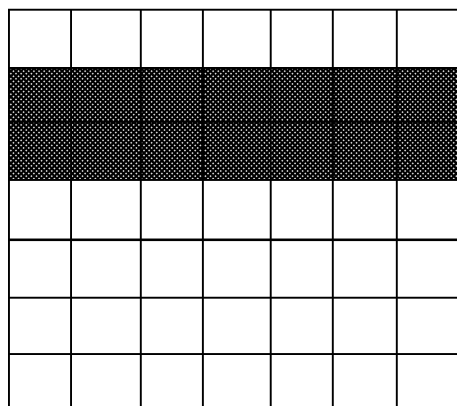
/Kyle Grabowski/  
Examiner, Art Unit 3725

/Derris H Banks/  
Supervisory Patent Examiner, Art  
Unit 3725

## **Appendix**

Green teaches that the modulo two sum (alternatively called the “exclusive or” function) is used to combine the desired image (FIG 1) and the first image pattern (FIG 2) to form the second image pattern (FIG 3) (Col. 3, 5-13). Example 1, displayed on the preceding page, shows that the modulo sum function results in the base area between the first image pattern and the second image pattern having an identical arrangement and the selection area between the first image pattern and the second image pattern having a non-identical pattern (indeed reverse). In a nutshell, the modulo sum function results in a “TRUE” or colored pixel when only one overlaying pixel (between the first and second image patterns) is present; when either both or neither of the pixels are “TRUE” or colored, there combination results in a “FALSE” or non-colored pixel (see attached dictionary.com reference)

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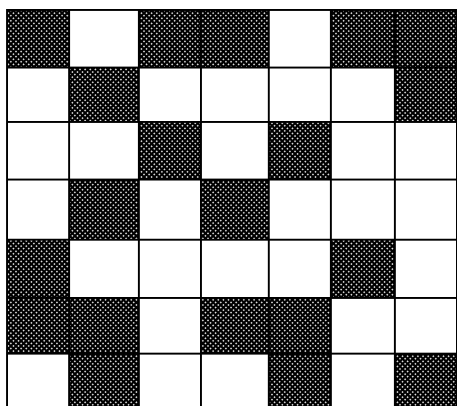
**EXAMPLE 1**

base area

section area

Green, FIG 1  
Desired Image (i.e. Stripe)

base area

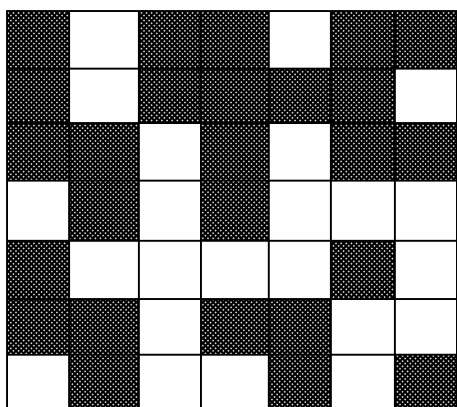


base area

section area

Green, FIG 2  
First Image Pattern  
(Random)

base area



base area

section area

Green, FIG 3  
Second Image Pattern  
(Random, though generated  
through a modulo two sum  
combination of FIG 1 and FIG 2)

base area